GRIFFIN INTERNATIONAL INC

JUL 14 11 05 AM '95

July 13, 1995

Mr. Matt Moran
Vermont ANR/DEC
Hazardous Materials Management Division
103 South Main Street/West Building
Waterbury, VT 05671-0404

RE: Report on the Investigation of Subsurface Petroleum Contamination at Morrison Sales & Service, Inc., Bennington, Vermont (VT DEC Site # 95-1748)

Dear Matt:

Enclosed is the site assessment report for the above referenced site. Please contact me if you have any questions regarding this report or other work conducted at the site.

Sincerely,

Erik C. Sandblom
Engineer

Enclosure

cc: Ed Smith, Morrison Sales & Service (w/o enclosure)

P.O. Box 943 • Williston, VT 05495 • 802-865-4288

JUL 14 1995

REPORT ON THE INVESTIGATION OF SUBSURFACE PETROLEUM CONTAMINATION

JULY 13, 1995

Site Location:

MORRISON SALES AND SERVICE, INC.
KOCHER DRIVE
BENNINGTON, VERMONT 05201
(VTDEC Site #95-1748)

Prepared For:

MORRISON SALES AND SERVICE, INC.
KOCHER DRIVE
BENNINGTON, VERMONT 05201

Prepared By:

P.O. Box 943 / 19 Commerce Street Williston, VT 05495 (802) 865-4288

TABLE OF CONTENTS

I. INTRODUCTION

The following report details the investigation of subsurface petroleum contamination detected at Morrison Sales and Service located on Kocher Drive in Bennington, Vermont. This work has been conducted by Griffin International, Inc. for Morrison Sales and Service (Morrison's) at the request of the Vermont Department of Environmental Conservation (VTDEC). The request came in a letter dated January 20, 1995 to Mr. Ed Smith of Morrison's, from Mr. Richard Spiese of the VTDEC. Work at the site has been conducted in accordance with the Griffin Work Plan and Cost Estimate dated April 3, 1995, prepared for Morrison's. This work plan was approved by the VTDEC in a letter dated April 6, 1995 to Peter Murray of Griffin from Mr. Matthew Moran of the VTDEC.

Work conducted at the site includes the installation of three groundwater monitoring wells in the vicinity of suspected subsurface petroleum contamination at the site, and the subsequent collection and analysis of groundwater samples from these wells, and the determination of groundwater flow direction and gradient at the site.

II. SITE BACKGROUND

A. Site History

On October 4, 1994, a 2,000 gallon capacity underground storage tank (UST) used to contain waste oil was permanently closed and removed from Morrison Sales & Service. The tank removal inspection report, prepared by Mr. Jim Shippee, indicated that petroleum contamination was detected in the soil as measured with a photo-ionization detector. According to recorded observations at the UST removal, the most likely cause of petroleum contamination to the subsurface is from a leak in the product pipe.

At the request of the VTDEC, Morrison's retained the services of Environmental Access Consulting Group for the collection and analysis of soil samples from the vicinity of the former UST. Two soil borings were drilled, one in the former UST location, and one along the north-eastern edge of the former tank pit. The approximate locations of the soil borings are indicated on the attached site map. The results of the analysis indicated the detection of benzene, toluene, ethyl benzene, and xylenes (BTEX), chemicals that are commonly found in petroleum products, in the sample collected from the center of the former tank pit. No BTEX was detected in the upgradient soil sample.

In a letter addressed to Morrison's from Mr. Richard Spiese of the VTDEC, dated January 20, 1995, the VTDEC indicated that the method of sample analysis was not appropriate for the analysis of petroleum impact from a waste oil UST. The VTDEC requested that Morrison's conduct additional work relative to the petroleum contamination at the property. Morrison's retained the services of Griffin International, Inc. to collect soil and groundwater samples at the site, and to further determine the extent and degree of petroleum contamination at the site. Griffin prepared a work plan

and cost estimate to conduct this work, dated April 3, 1995, which has been approved by the VTDEC. All work contained in this plan is summarized in this report.

B. Site Description

Morrison Sales and Service is an automobile dealership and service station located on the north side of Kocher Drive in Bennington, Vermont. The site is located in the Waloomsac River Valley. The land use in the vicinity is commercial and industrial. The site is bordered to the north by Willow Park, which has been developed over the former Town of Bennington Landfill, to the east by an industrial plant which manufactures lubricating systems, to the south by Kocher Drive and a shopping plaza, and to the west by the Furnace Brook and a motel. The majority of the site is paved with the exception of the main building, which is constructed upon a concrete slab foundation. All buildings in the vicinity are served by the Town of Bennington municipal water system and sewer system.

Studies that have been conducted at the adjacent closed landfill indicate that the groundwater flow in the vicinity is west, towards the Furnace Brook. The groundwater depth is approximately three feet below grade elevation. Overburden soils at the site are glacial outwash consisting primarily of medium sand and gravel near the ground surface, grading to finer sand and silt near the water table, over densely consolidated very fine sand and silt.

III. INVESTIGATIVE PROCEDURES

A. Monitoring Well Installation

On May 2, 1995, three groundwater monitoring wells (MW-1, MW-2, and MW-3) were installed to determine the extent and degree of subsurface contamination at the site. The locations of the wells are displayed on the site map in Appendix A The wells were installed by Technical Drilling Services of Leominster, Massachusetts, under the direct supervision of a Griffin engineer. Continuous soil samples were first collected with the use of a two inch diameter vibratory driven geoprobe. Wells were then constructed in the soil borings after the removal of the sampling tube. Soil types from each boring were noted and logged in detail. Each soil sample was screened for volatile organic compounds (VOCs) with an H-Nu HW-101 photoionization detector (PID). All wells were developed by hand, using a bailer, immediately following installation.

The wells were constructed of factory slotted, one-inch diameter PVC pipe with a slot size of 0.010 inch and a schedule 40 PVC riser. The length of the screen varied depending on the depth of the well and the location of the water table in the borehole. Specific well construction details are displayed in the detailed well logs included in Appendix B at the end of this report. All wells were installed in accordance with Griffin protocols which comply with State and industry standards.

Soils encountered while installing MW-1, MW-2, and MW-3 were primarily medium sand and fine to medium gravel from the ground surface to approximately two feet below grade, over fine sand and silt. Some medium gravel mixed with the silt and sand was encountered at depths greater than four feet below the ground surface. The overburden soils appeared to be relatively well consolidated. The water table in these three borings was located approximately three feet below the ground surface. The sampler could not be advanced beyond seven feet below grade in MW-3 indicating the presence of either a boulder or bedrock.

Screening of the soil samples with a PID indicated a maximum VOC concentration in the soil from MW-1 of 42 parts per million (ppm) near the water table. The maximum VOC concentration detected in MW-2 was 15.2 ppm, and no greater than 0.2 ppm was detected in MW-3. Some staining on the pavement was observed in the vicinity of MW-2 that may have been created by a petroleum based substance. This is also very close to the trash dumpster for the building. As soil samples could not be retrieved beyond four feet during the construction of MW-1 and MW-2, the vertical extent of soil contamination could not be defined for these two soil borings.

B. Determination of Groundwater Flow Direction and Gradient

The monitoring wells were allowed to stabilize, undisturbed, for approximately three hours following the installation of the wells. After this period, depth to water measurements were collected with the use of a Monoflex water level indicator for MW-2 and MW-3. These measurements were subtracted from the top of casing elevations, which were determined relative to an arbitrary datum of 100 feet at top of the casing for MW-1, to determine the water table elevation at the wells. A precise water level measurement was not obtained for MW-1 due to the presence of free floating petroleum product in the well.

The groundwater flow direction and gradient was estimated based on the water elevation data collected from MW-2 and MW-3, data obtained from studies conducted at the former town landfill which indicates a groundwater flow to the west, and from local topography and surface water drainage patterns. An estimate of the groundwater contours at the site in the vicinity of the former UST is displayed on the groundwater contour map contained in the appendix at the end of this report. The estimated groundwater flow direction for May 2, 1995 was likely to the west southwest at an approximate gradient of 4.2%.

C. Groundwater Sample Collection and Analysis

Immediately following depth to water data collection on May 2, 1995, samples of the groundwater were collected from MW-2 and MW-3. A sample of water was not collected from MW-1 due to the presence of free floating petroleum product, which was observed in a sample collected from the well in a bailer. The product observed in the sample consisted of large brown oily globules. It was not possible to determine product thickness as the outside of the bailer was soiled after collecting the sample, and the sample within the bailer could not be seen without pouring the sample out of the bailer. All water samples collected were analyzed for volatile organic compounds (VOCs), per EPA Method 8240 and for total petroleum hydrocarbons (TPH) per Modified EPA Method 8100. Results of the laboratory analyses for those wells sampled on this date are summarized in Appendix C.

According to the results of the sample analyses, no detectable concentrations of VOCs were present in either of the samples collected. TPH was not detected in the sample collected from MW-2. The sample collected from MW-3 contained a low concentration of TPH (4.34 ppm).

All samples were collected according to Griffin's groundwater sampling protocol which complies with industry and state standards. Results from the analyses of the duplicate, trip blank and equipment blank samples indicate that adequate quality assurance and control (QA/QC) were maintained during sample collection and analyses.

D. Sensitive Receptor Risk Assessment

A receptor risk assessment was conducted to identify known and potential receptors of the petroleum contamination detected at Morrison's. A visual survey was conducted at the time of monitoring well installation at the site, and a determination of the potential risk to identified receptors was conducted based on proximity, groundwater flow direction, and contaminant concentration levels.

Water Supplies

No drinking water supplies have been identified in the vicinity of Morrison Sales and Service. All property in the vicinity is served by the Bennington municipal water system. No private wells were identified in the vicinity of the site based on visual observation. Based on this limited assessment, it is not likely that drinking water supplies are at risk of impact from petroleum contamination detected at Morrison Sales and Service.

Surface Waters

The nearest observed surface water to the site is the Furnace Brook, located to the west of the site, which flows in a northwesterly direction. Groundwater at the site flows

towards the Furnace Brook, perpendicular to it. According to groundwater quality data from the down-gradient well at the site (MW-2), there are no detectable concentrations of petroleum contaminants fifty feet down-gradient of the source of contamination at the site. Therefore, it is not likely that petroleum contamination at the site is flowing to the Furnace Brook, or off the site. Based on this relatively recent data, it can be reasonably determined that the Furnace Brook is not at immediate or future risk of impact from petroleum contamination detected at Morrison's.

Buildings in the Vicinity

The only building in the vicinity of the former UST is the main Morrison Sales and Service building. The location of most significant petroleum contamination impact, as determined while installing monitoring wells, is approximately fifteen feet from the northern edge of the building. The building is constructed upon a concrete slab foundation, and there is no basement. Due to the construction of the building, the apparent containment of the contamination, and the relatively low volatility of the type of contaminant, it is not likely that the building is at risk of petroleum vapor impact from the contamination detected at Morrison's. No other buildings in the vicinity of the site are located in a proximity to the detected contamination to be significantly impacted by petroleum vapors.

IV. CONCLUSIONS

Based on the data collected from Morrison Sales and Service and vicinity in Bennington, Vermont, during May of 1995, the following conclusions are presented.

1) Petroleum contamination exists in the soils (adsorbed) and in the groundwater (free phase) in the immediate vicinity of a former 2,000 gallon capacity waste oil UST. Prior observations at the site indicate that this petroleum release is likely the result of leaky piping, and did not leak from the UST itself. Based on the results of groundwater sample analyses and the results of soil sample screening and laboratory analysis, petroleum contamination at the site does not likely extend beyond the immediate vicinity of the former UST and associated piping. VOC concentrations detected in the soil during the drilling of MW-2 may have been the result of small spills as evidenced by staining observed in the area, and not necessarily from the waste oil UST. This is supported by the lack of petroleum contamination detected in the water sample collected from MW-2.

2) The soil types underlying the site are glacial outwash consisting primarily of medium sand and gravel near the ground surface, grading to finer sand and silt near the water table, over densely consolidated very fine sand and silt. Soil types are therefore likely to be relatively permeable from grade level to the water table. However, the well consolidated fine sand and silt encountered below the water table is likely significantly more restrictive to contaminant transport.

3) Based on a limited survey of potential receptors of petroleum contamination in the vicinity of the site, it is not likely that petroleum contamination detected at the site poses a significant risk to receptors in the area.

4) Over time, the natural processes of dilution, dispersion, volatilization, and biodegradation will likely reduce contaminant concentrations present in the subsurface in the vicinity of the former UST.

V. RECOMMENDATIONS

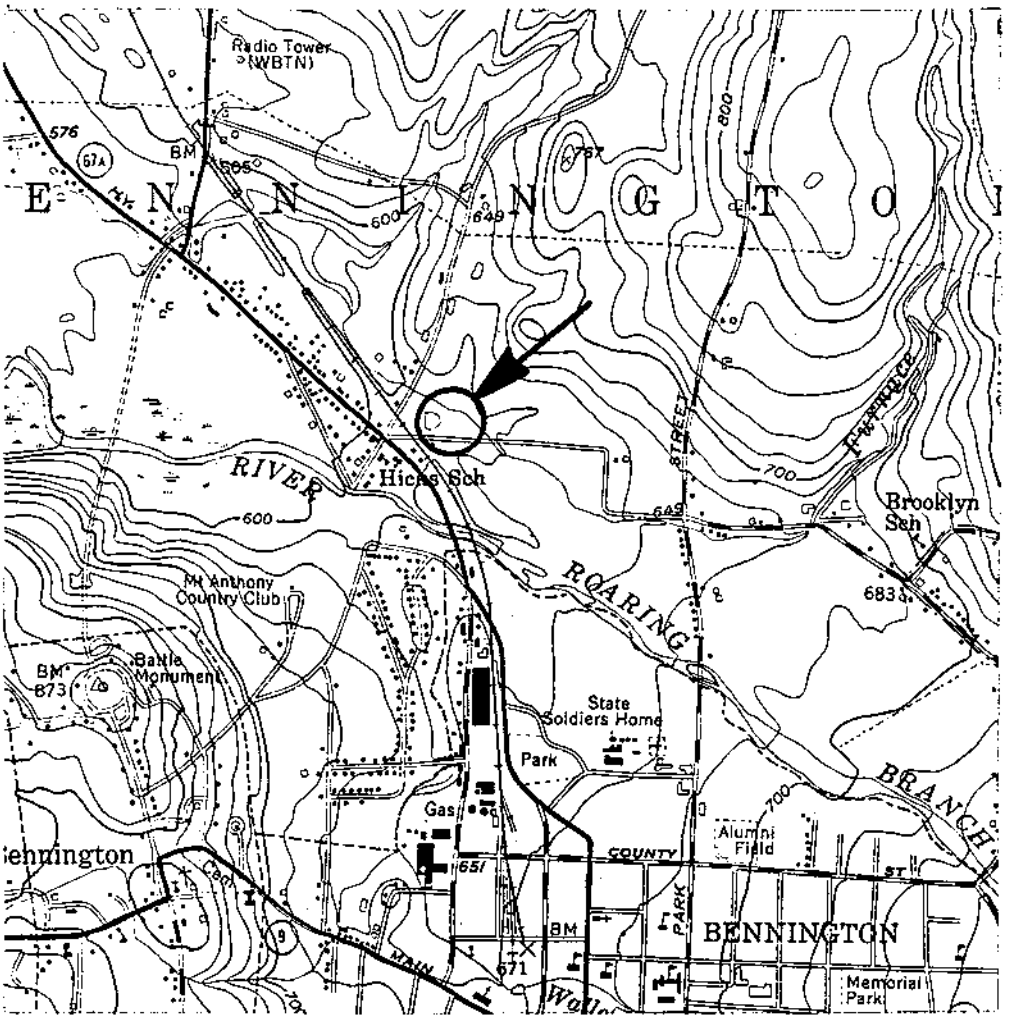
Based on the above conclusions, Griffin recommends the following action concerning petroleum contamination at Morrison Sales and Service located in Bennington, Vermont.

1) In order to adequately track and document the expected degradation of petroleum contamination at the site, the groundwater on site should be sampled for laboratory analysis on a semi-annual basis for a period of one year. Water samples should be collected from each of the three on-site wells that do not contain free product and laboratory analyzed per EPA Method 8240 and Modified EPA Method 8100. A sample should be collected from MW-1 to determine the level of free phase petroleum contamination. If no free product is observed, then a water sample should be collected from this well also. If petroleum contamination levels in MW-2 and MW-3 do not increase over the next year, the groundwater monitoring frequency at the site should be decreased or discontinued. Determinations shall be made at the reporting of each sampling event relative to the need for remediation of the former tank pit area.

APPENDIX A

SITE MAPS

1) Site Location Map
2) Site Map
3) Groundwater Contour Map



JOB #: 2954642
SOURCE: USGS- BENNINGTON, VERMONT QUADRANGLE

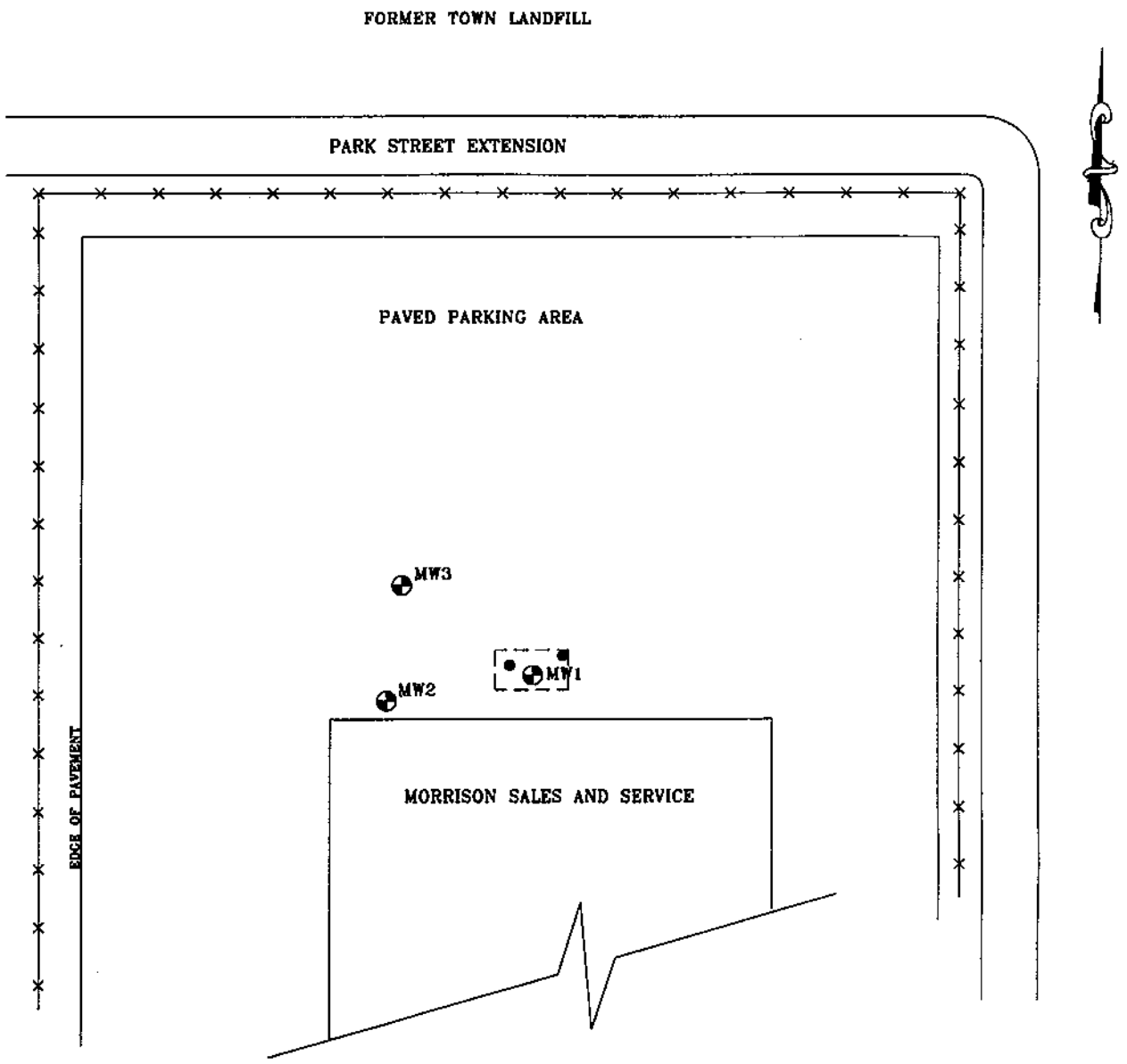
GRIFFIN INTERNATIONAL INC

MORRISON SALES AND SERVICE

BENNINGTON, VERMONT

SITE LOCATION MAP

DATE: 5/5/95	DWG.#:1	SCALE: 1:24000	DRN.:SB	APP.:ES



LEGEND

- MW2 — MONITORING WELL
- FORMER UST LOCATION
- FORMER SOIL SAMPLE LOCATIONS
- FENCE

JOB #: 2954642

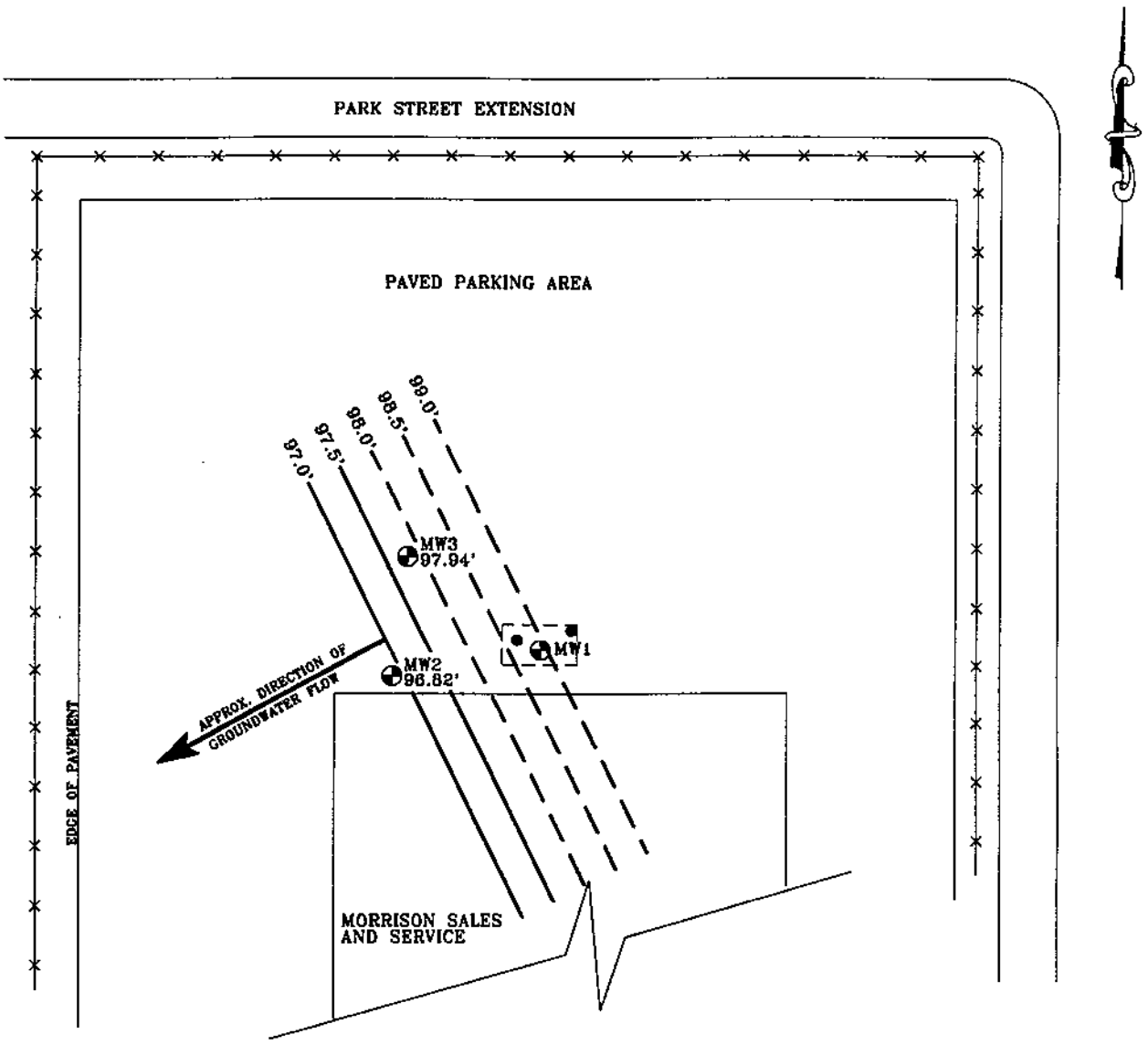
GRIFFIN INTERNATIONAL INC

MORRISON SALES AND SERVICE

BENNINGTON, VERMONT

SITE MAP

DATE: 7/5/95	DWG.#: 2	SCALE: 1"=60'	DRN.:SB	APP.:ES



LEGEND

- MW2 96.82' — MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 97.0' — GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- FORMER UST LOCATION
- FORMER SOIL SAMPLE LOCATIONS
- FENCE

JOB #: 2954642
MEASUREMENT DATE: 5/2/95

GRIFFIN INTERNATIONAL INC

MORRISON SALES AND SERVICE

BENNINGTON, VERMONT

GROUNDWATER CONTOUR MAP

DATE: 7/5/95	DWG.#: 3	SCALE: 1"=60'	DRN.:SB	APP.:ES

APPENDIX B

MONITORING WELL LOGS

PROJECT MORRISON SALES AND SERVICE

LOCATION BENNINGTON, VERMONT

DATE DRILLED 5/2/95 TOTAL DEPTH OF HOLE 8'

DIAMETER 2"

SCREEN DIA. 1" LENGTH 6' SLOT SIZE 0.010"

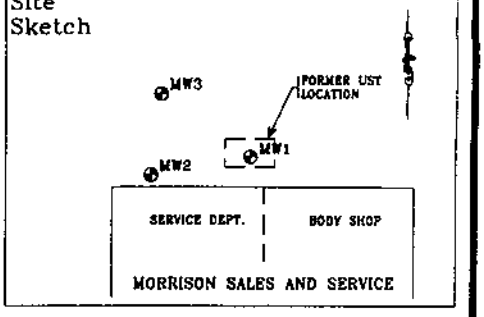
CASING DIA. 1" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. TDS DRILLING METHOD VIBRATORY

DRILLER TOBY GRAG LOG BY E. SANDBLOM

WELL NUMBER MW1

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE		Pavement	0
1		BENTONITE			1
2		WELL RISER	1'-2' 32 ppm	Dry orange to gray/brown medium grained SAND with some silt and medium gravel.	2
3			3'-4' 41 ppm	3.0' WATER TABLE	3
4		WELL SCREEN			4
5		SAND PACK			5
6				(No recovery)	6
7		BOTTOM CAP			7
8		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 8' END OF EXPLORATION AT 8'	8
9					9
10					10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT MORRISON SALES AND SERVICE

LOCATION BENNINGTON, VERMONT

DATE DRILLED 5/2/95 TOTAL DEPTH OF HOLE 8'

DIAMETER 2"

SCREEN DIA. 1" LENGTH 6' SLOT SIZE 0.010"

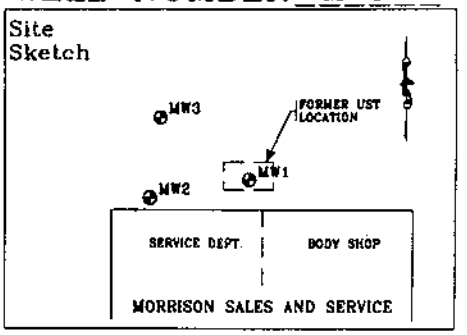
CASING DIA. 1" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. TDS DRILLING METHOD VIBRATORY

DRILLER TOBY GRAG LOG BY E. SANDBLOM

WELL NUMBER MW2

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE		Pavement	0
1		BENTONITE	0'-1' 0.5 ppm	Saturated medium to fine SAND and some silt and medium grained gravel densely consolidated.	1
2		WELL RISER	2'-3' 15.2 ppm		2
3				2.8' WATER TABLE	3
4		WELL SCREEN			4
5		SAND PACK			5
6					6
7		BOTTOM CAP			7
8		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 8' END OF EXPLORATION AT 8'	8
9					9
10					10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT MORRISON SALES AND SERVICE

LOCATION BENNINGTON, VERMONT

DATE DRILLED 5/2/95 TOTAL DEPTH OF HOLE 7'

DIAMETER 2"

SCREEN DIA. 1" LENGTH 6' SLOT SIZE 0.010"

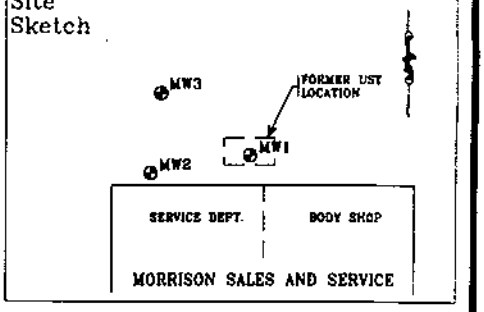
CASING DIA. 1" LENGTH 5' TYPE sch 40 pvc

DRILLING CO. TDS DRILLING METHOD VIBRATORY

DRILLER TOBY GRAG LOG BY E. SANDBLOM

WELL NUMBER MW3

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE		Pavement	0
1		BENTONITE	1'-2' 0.2 ppm	Dry light brown medium SAND and GRAVEL.	1
2		WELL RISER	2'-3' 0.2 ppm	Fine SAND and SILT, densely consolidated. 3.0' WATER TABLE	2
3		SAND PACK	3'-4'		3
4			0.2 ppm	Saturated medium SAND and GRAVEL.	4
5		WELL SCREEN	4'-7' 0.2 ppm	Saturated brown very fine SAND and SILT and medium to coarse gravel.	5
6		BOTTOM CAP			6
7		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 7' END OF EXPLORATION AT 7'	7
8					8
9					9
10					10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

APPENDIX C

GROUNDWATER QUALITY DATA SUMMARY

7/5/95

Groundwater Quality Summary
Morrison Sales and Service
Bennington, Vermont

Monitoring Well 1 (MW-1)

PARAMETER	Date of Sample Collection 5/2/95					
Benzene						
Ethylbenzene	No Sample					
Toluene	Collected					
Xylenes						
Total Petroleum Hydrocarbons	Free					
Other:	Product					
	in Well					
Total BTEX						
MTBE						
BTEX+MTBE						

Monitoring Well 2 (MW-2)

PARAMETER	Date of Sample Collection 5/2/95					
Benzene	ND					
Ethylbenzene	ND					
Toluene	ND					
Xylenes	ND					
Total Petroleum Hydrocarbons	ND					
Other:	ND					
	ND					
Total BTEX	0.0					
MTBE	ND					
BTEX+MTBE	0.0					

Monitoring Well 3 (MW-3)

PARAMETER	Date of Sample Collection 5/2/95					
Benzene	ND					
Ethylbenzene	ND					
Toluene	ND					
Xylenes	ND					
Total Petroleum Hydrocarbons	4.34					
Other:	ND					
	ND					
Total BTEX	0.0					
MTBE	ND					
BTEX+MTBE	0.0					

Notes: All values reported in ug/L (ppb) except TPH reported in mg/L (ppm)
ND - None Detected

Ref: MORRIS1.XLS

APPENDIX D

GROUNDWATER LIQUID LEVEL DATA

7/5/95

Liquid Level Monitoring Data
Morrison Sales and Service
Bennington, Vermont

Monitoring Date:
2-May-95

Well I.D.	Well Depth	Top of Casing Elevation	Depth to Product	Depth to Water	Product Thickness	Specific Gravity of Product	Hydro Equivalent	Corrected Depth to Water	Corrected Water Table Elevation
MW-1	8.0	100.00	-	N/A*	-	-	-	-	-
MW-2	8.0	99.84	-	3.02	-	-	-	3.02	96.82
MW-3	7.0	100.41	-	2.47	-	-	-	2.47	97.94

Notes: All values reported in feet.
*Liquid level not collected due to equipment incompatibility with observed product.

APPENDIX E

LABORATORY ANALYSIS REPORTS

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Morrison Sales and Service
REPORT DATE: May 10, 1995
DATE SAMPLED: May 2, 1995

PROJECT CODE: GIMS1969
REF. #: 73,917 - 73,919

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated the samples were preserved with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Griffin International
PROJECT NAME: Morrison Sales and Service
REPORT DATE: May 10, 1995
DATE SAMPLED: May 2, 1995
DATE RECEIVED: May 3, 1995
ANALYSIS DATE: May 9, 1995

PROJECT CODE: GIMS1969
REF.#: 73,917
STATION: Trip Blank
TIME SAMPLED: 6:01
SAMPLER: Erik Sandblom

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10	ND[1]
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	7	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REF.#: 73,917

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 96.%
Toluene-d8 : 96.%
4-Bromofluorobenzene : 113.%

NOTES:

1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Griffin International
PROJECT NAME: Morrison Sales and Service
REPORT DATE: May 10, 1995
DATE SAMPLED: May 2, 1995
DATE RECEIVED: May 3, 1995
ANALYSIS DATE: May 9, 1995

PROJECT CODE: GIMS1969
REF.#: 73,918
STATION: MW-3
TIME SAMPLED: 12:18
SAMPLER: Erik Sandblom

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10	ND[1]
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	7	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND

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REF.#: 73,918

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 84.%
Toluene-d8 : 98.%
4-Bromofluorobenzene : 111.%

NOTES:

1 None detected

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LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Griffin International
PROJECT NAME: Morrison Sales and Service
REPORT DATE: May 10, 1995
DATE SAMPLED: May 2, 1995
DATE RECEIVED: May 3, 1995
ANALYSIS DATE: May 9, 1995

PROJECT CODE: GIMS1969
REF.#: 73,919
STATION: MW-2
TIME SAMPLED: 14:09
SAMPLER: Erik Sandblom

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10	ND[1]
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	7	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND

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REF.#: 73,919

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 87.%
Toluene-d8 : 97.%
4-Bromofluorobenzene : 111.%

NOTES:

1 None detected

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73,917 - 73,921

CHAIN-OF-CUSTODY RECORD

008728

RECEIVED MAY 11 1995

Project Name: Morrison Soles & Service Site Location: Bennington VT	Reporting Address: Griffin	Billing Address: Griffin
Endyne Project Number: 6ims1969	Company: Griffin Contact Name/Phone #: Erik Sandblom / 865-4266	Sampler Name: Erik Sandblom Phone #: 865-4266

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 5/2/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
73,917	Trip Blank	H_2O	X		6:01	2	40mL	8240 VOC	8240	HCl	
	MW-3	H_2O	X		12:06	1	1 L	8100 TPH	8100 (mod)	HCl	
73,918	MW-3	H_2O	X		12:18	2	40mL	8240 VOC	8240	HCl	
	MW-2	H_2O	X		14:03	1	1L	8100 TPH	8100 (mod)	HCl	
73,919	MW-2	H_2O	X		14:09	2	40mL	8240 VOC	8240	HCl	

Relinquished by: Signature Erik Sandblom	Received by: Signature Beth Ward	Date/Time 5/2/95 19:40
Relinquished by: Signature Beth Ward	Received by: ~~Signature~~ Iona M. Chambers	Date/Time 5-3-95 9:55

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): EPA 8100 (modified) for TPH										

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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Morrison Sales & Service
DATE REPORTED: May 17, 1995
DATE SAMPLED: May 2, 1995

PROJECT CODE: GIMS1970
REF. #: 73,920 - 73,921

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: May 17, 1995
CLIENT: Griffin International
PROJECT: Morrison Sales & Service
PROJECT CODE: GIMS1970
COLLECTED BY: Erik Sandblom
DATE SAMPLED: May 2, 1995
DATE RECEIVED: May 3, 1995

Reference #	Sample ID	Concentration(mg/L)[1]
73,920	MW-3; 12:06	4.34
73,921	MW-2; 14:03	ND[2]

Notes:

1 Method detection limit is 1.0 mg/L.
2 None Detected

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TPH BY MODIFIED METHOD 8100 LABORATORY REPORT

DUPLICATE LABORATORY CONTROL DATA

CLIENT: Griffin International
PROJECT NAME: Morrison Sales & Service
REPORT DATE: May 17, 1995
DATE SAMPLED: May 2, 1995
DATE RECEIVED: May 3, 1995

PROJECT CODE: GIMS1970
REF.#: 73,920
STATION: MW-3
TIME SAMPLED: 12:06
SAMPLER: Erik Sandblom

Parameter	Dup 1(mg/L)	Dup 2(mg/L)	% Difference
Total Petroleum Hydrocarbons	4.57	4.10	5.

RECEIVED MAY 1995

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CHAIN-OF-CUSTODY RECORD

008728

Project Name: Morrison Sales & Service Site Location: Bennington, VT	Reporting Address: Griffin	Billing Address: Griffin
Endyne Project Number: GIMS1970	Company: Griffin Contact Name/Phone #: Erik Sandblom / 865-4288	Sampler Name: Erik Sandblom Phone #: 865-4288

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	Trip Blank	H_2O	X		6:01	2	40mL	8240 VOC	8240	HCl	
73,920	MW-3	H_2O	X		12:06	1	1 L	8100 TPH	8100 (mod)	HCl	
	MW-3	H_2O	X		12:18	2	40mL	8240 VOC	8240	HCl	
73,921	MW-2	H_2O	X		14:03	1	1L	8100 TPH	8100 (mod)	HCl	
	MW-2	H_2O	X		14:09	2	40mL	8240 VOC	8240	HCl	

Relinquished by: Signature [signature]	Received by: Signature Beth Ward	Date/Time 5/2/95 19:40
Relinquished by: Signature Beth Ward	Received by: Signature Tom M. Chambers	Date/Time 5-3-95 9:55

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): EPA 8100 (modified) for TPH										